

EXHIBIT 3

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION**

FALL LINE PATENTS LLC,

Plaintiff,

v.

ZOE'S KITCHEN, INC., ET AL.,

Defendants.

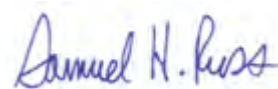
CIVIL ACTION NO. 6:18-CV-00407-RWS
(Consolidated Lead Case)

JURY TRIAL DEMANDED

**EXPERT REPORT OF DR. SAMUEL H. RUSS CONCERNING VALIDITY OF U.S.
PATENT NUMBER 9,454,748**

Dated: January 31, 2023

Respectfully submitted,



Dr. Samuel H. Russ

I. Introduction

1. I have been asked to provide my opinions regarding the validity of claim 7 of U.S. Patent 9,454,748 to Payne (the “asserted patent” or the “ ‘748 Patent”). Specifically, I have been asked to review the report of Stephen Gray in which Mr. Gray opines that Claim 7 is invalid because it claims subject matter that is not eligible for patenting. For the reasons discussed below, my opinion is that Mr. Gray’s analysis is flawed and that he has not shown that claim 7 is ineligible for patenting. In my opinion, claim 7 claims subject matter that is not directed to an abstract idea. Moreover, in my opinion, claim 7 claims subject matter that is inventive: in other words, it claims subject matter that is not merely well known, routine, or conventional (“well known”).

II. Background and Qualifications

2. My background and qualifications are listed in my report on infringement filed earlier in this case.

III. Legal Standards

A. Legal Principles

3. In considering whether the Patent in Suit is valid, I followed the instructions of Fall Line’s attorneys on the appropriate standards to apply.

4. To succeed on its claims for patent ineligibility, there is a two-part test to distinguish patents that claim laws of nature, natural phenomena, and abstract ideas

from those that claim patent-eligible applications of those concepts. First, McDonald's must show by clear and convincing evidence that the patent's claims are directed to an abstract idea. Second, if the claims are directed to an abstract idea, McDonald's must show by clear and convincing evidence that the elements of the asserted claims, when taken individually or when taken as an ordered combination, involve only technology which a person of ordinary skill in the art would have considered to be well-understood, routine, and conventional as of the invention date, which is the earlier of the priority date or the conception date of the asserted patent.

5. Whether a particular technology was well-understood, routine, and conventional goes beyond what was known in the prior art. The mere fact that something is disclosed in a piece of prior art does not mean that it was well-understood, routine, and conventional. The elements of each claim are considered both individually and as an ordered combination.

B. Claim Construction

6. I understand that the Court has issued a claim-construction order. I have reviewed Mr. Gray's analysis, which purports to use the plain and ordinary meaning for all of the claim terms. (*I.e.*, The Gray report did not appear to apply any particular claim construction, and therefore use the plain and ordinary meaning for all claim terms.) As explain below, I believe this is the incorrect analysis. In the correct analysis below, I have applied the Court's claim constructions:

Term	Court's Construction
“customized for a particular location”	Plain meaning
“loosely networked” / “loose network”	“tolerant of intermittent network connections and tolerant of the type of network connection available”
“GPS integral thereto” / “said GPS”	“GPS receiver integral thereto” / “said GPS receiver”
“executable”	“of, pertaining to, or being a program file that can be run” and includes JAVA and markup languages (XML, HTML, JSON, etc.)”
“questionnaire”	“a program or form that includes a question or statement, which calls for a response”
“when said loosely networked computer is at said particular location, executing said transferred questionnaire on said loosely networked computer, thereby collecting responses from the user”	plain and ordinary meaning
“requests location identifying information”	plain and ordinary meaning
Order of Steps	the steps of Claim 7 must be performed in the following order: (a) must begin before, but can overlap with (b); (b) must begin before, but can overlap with (c); (c) must begin before, but can overlap with (d) and (e); (e) must begin before, but can overlap with (f)
“automatically transferring”	“transferring that is not initiated upon direction of the user”

IV. Technical Background

7. The '748 Patent is a continuation of a patent filed in 2003 and claims priority to a provisional application filed in 2002 and the invention was conceived in 2001.

A. Computing and Communications

8. It is clear that the mid-90's represented a watershed in computing and communications technology. Spurred by advances in Moore's Law, desktop computers reached a point where they could easily and affordably run software such as word processing applications. Communications technology, fueled by the ability to perform digital signal processing locally, made major advances in the ability to transfer data at higher data rates.

9. One example of this was the migration from dedicated telephone modems to built-in modems. Such integrated modems were able to operate much faster, 10-30 kbit/s, because of sophisticated modulation and demodulation techniques and could be run in software on desktop computers because of advances in processor technology. Moore's Law had pushed the transistor count of processors to the point where they could take over the signal-processing tasks previously performed by separate, external modems.

10. The result was a revolution in computing and communications.

B. Handheld Computers

11. In the late 1990s, computers shrank to the point of being handheld. For example, the Palm Pilot was introduced in 1996 ("Palm Pilot: Everything You Need

to Know”, <https://history-computer.com/palm-pilot-guide/> , Accessed 12/4/22), spawning an entire industry in personal data assistants. Such computers featured a basic screen, touch or pen operation, and an operating system that permitted applications to be loaded and updated.

C. Web Browser Technology

12. In 1989, Tim Berners-Lee, a physicist at CERN, developed a system for sharing information over the then-growing Internet. It was a classic example of the right idea coming along at the right time – it arrived just as computing and communications underwent a noticeable revolution.

13. By the mid-1990s, the World Wide Web began to enter mainstream culture, and with it, the technologies that enabled it, including Hypertext Markup Language (HTML) and Web servers.

14. For example, Web pages as user interfaces and as tools to gather information, such as online purchasing, began to be embraced. One example of a technology that became adopted was Javascript, introduced in 1995. Javascript made it possible to author software that could run in nearly all popular web browsers and, when run, would create a user interface on the client device. Indeed, Javascript is still widely used today, 27 years later.

15. By promoting and facilitating data transfer, Web-based protocols, such as HTML, and Web-enabled data-transfer technologies, such as JSON and XML, have

made the ability to manage user interfaces easier. Further, by tying the user interface to these technologies, the interface can be rapidly changed and rapidly updated. In fact, it can be updated while the user is accessing it.

D. Networking Technology

16. Conventional “wired” networks had been in development since the first days of computing. A very popular technology for so-called local-area networking was Ethernet, created in 1973. Ethernet became popular worldwide but suffered from one obvious shortcoming – it required physical cabling and so a computer with Ethernet was literally tied down.

17. Wireless networking had been in development simultaneously (and, indeed, Ethernet drew heavily on an earlier wireless network known as Aloha Net), but became practical only in the late 1990s.

18. In terms of local-area wireless networking, the standards-making body that controlled Ethernet (IEEE 802) proposed a series of wireless technologies culminating in 802.11B, introduced in 1999. 802.11B, and its faster cousin 802.11A, became the dominant wireless networking technology. Perhaps because of its close kinship to Ethernet, and perhaps because of a concerted effort to harmonize standards, corporate offices embraced it, driving down costs and eventually fueling widespread consumer adoption.

19. Wide-area wireless networking grew out of telephone networks. Cellular telephony was well-established, having become popular in the mid-1980s. Standards such as CDPD, introduced in the early 1990's, GPRS, introduced in 2000, provided cellular devices with the ability to exchange data using commonly used protocols such as TCP/IP.

E. GPS Technology and Location Services

20. The U.S. Global Positioning System was launched in the late 1980's. Using highly accurate time measurements of signals from multiple satellites, the system offers the ability to locate oneself on Earth's surface with an accuracy measured in meters, or sometimes even centimeters.

21. Originally conceived to help the U.S. military navigate worldwide, the accuracy of civilian GPS has been gradually improved. After the end of the Cold War, technology companies asked for the accuracy of civilian GPS to be improved to that of military, permitting one to know location down to a street corner. Like the rest of the computing and signal-processing world, advances in Moore's Law shrunk the size of a GPS receiver to the point where it was portable.

22. For example, an article published in 2000 describes the paper design of a small GPS receiver. (Won Namgoong and T. Meng, "GPS receiver design for portable applications," *2000 IEEE International Conference on Acoustics, Speech, and Signal Processing. Proceedings (Cat. No.00CH37100)*, Istanbul, Turkey, 2000, pp.

3706-3709 vol.6, doi: 10.1109/ICASSP.2000.860207.) The paper explains the focus of the design was “on achieving low-power consumption and high level of integration, which are important design goals in a portable system.” (*Ibid*) The work was funded by DARPA, the US Department of Defense Advanced Research Project Agency. (*Ibid*) DARPA is famous in technical circles for funding leading-edge technology, highlighting the advanced nature of the article. In other words, small GPS receivers, capable of integration into other devices, were at the leading edge of development in 2000. So, to recap, a paper design of a GPS receiver capable of being integrated into a portable device was regarded as a research breakthrough in 2000.

23. In another example, research was published in 2006 that demonstrated linking GPS to a PDA enabled health-care workers in South Africa to track tuberculosis patients with greater accuracy than using street addresses. (See Dwolatzky, *et al.*, “Linking the global positioning system (GPS) to a personal digital assistant (PDA) to support tuberculosis control in South Africa: a pilot study”, *International Journal of Health Geographics* 2006, 5:34, doi:10.1186/1476-072X-5-34, Accessed via <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1563457/> on 12/29/2022.) The article explains how an external GPS receiver was linked via Bluetooth to an HP iPAQ 8000 PDA running the Microsoft PocketPC 2002 operating system.

24. The article goes on to explain that “[t]his is the first report we are aware of that assesses the role of GPS in improving the efficiency of TB patient tracing and in which PDAs are used linked with GPS. We piloted a novel information technology approach that could potentially improve patient retention within TB control programmes. Using the specially developed PDA/GPS application, lay volunteers with minimal training were able to record the GPS coordinates of a patient's home and using the same prototype application, different lay volunteers were able to locate all of the patients' homes using their GPS coordinates even in the narrow confines of densely populated informal settlements of Alexandria.” (*Ibid*) The article concludes “We have shown preliminary evidence in this pilot study that PDA/GPS devices can easily be used to locate clinic attendees' homes successfully using unskilled lay personnel with minimal training.” (*Ibid*) In other words, the paper makes clear that combining GPS with a PDA was a relatively new technology and that the combination enabled important new features, such as the ability to log location, find homes, and enter data.

25. It also acknowledged shortcomings in existing technology. For example, the article explains why a separate GPS unit was connected via Bluetooth to a PDA: “In all applications, the PDA could be programmed for direct data entry by staff members as has been done in other poorly resourced settings [31]. Inexpensive handheld GPS receivers with back-tracing facilities e.g. the Forotrex receiver

(Garmin International Inc. Olathe, KS) could be used for this application *but may be more difficult to use by a layperson and would not have the data-entry applications or adaptability of the PDA/GPS device*, particularly the potential to link with comprehensive health information software.” (*Ibid*, emphasis added) In other words, at the time of the article (2005), PDAs were good for data entry and GPS units were difficult to program. This latter point is easily overlooked – units with built-in GPS receivers were difficult to program and were usually developed specifically for navigation and not data entry.

26. The article also shows the steps required to program the PDA: “Customised software was developed for the PDA by an experienced programmer, written in C# programming language, using the Microsoft.NET framework.” (*Ibid*) In other words, an “experienced programmer” developed custom software specifically for this particular model of PDA.

27. This article captures both the prospect of GPS-enabled data-gathering and the difficulty required to implement it. Interestingly, the difficulty of programming both a PDA and a GPS were specifically noted in the ‘748 patent, and the patent is drawn to, among other things, dealing with this issue.

V. Summary of the Asserted Patent

28. The ‘748 Patent is drawn to a “method for the management of data collected from remote computing device” (‘748 at Abstract). Specifically, the patent

addresses the steps of “creating a questionnaire; transmitting the questionnaire to a remote computer; executing the questionnaire in the remote computer to prompt a user for responses to questions of the questionnaire; transmitting the responses to a sever via a network; making the responses available on the Web” (‘748 at Abstract).

29. The specification notes that there had been recent advances in computing and communication technology, such as handheld computers (‘748 at 1:33-40) and wireless communications (‘748 at 3:30-53). Such technology would seem to be well suited for data-gathering activities (‘748 at 2:41-67). The specification often refers to data-gathering exercises as “questionnaires” (‘748 at 8:25-37).

30. One goal of the invention was to create a system that enables developers to create questionnaires rapidly and deploy them easily. In explaining the prior art, the specification explains, “To develop software for a handheld computer, a custom program is typically developed and tested on a larger system. When the developer is satisfied with the program, it is compiled for a particular target device and transferred to handheld devices through a communication link. If users are using more than one type of device, the same program must be tested and compiled for each type of device. If a change is required, the developer must make the change on the development system and re-transfer the entire program to each target device.” (‘748 at 3:1-10.) To solve this issue, the specification proposes an “operating instruction system” that enables the same questionnaire to execute successfully on a

wide variety of platforms. (*See, e.g.* ‘748 at 7:47-58, 8:25-37) Because of this arrangement, questionnaires can easily be constructed “by simply entering questions and providing response specification, in the form of a questionnaire, for the end-user. Thus, no particular programming skill is required to generate programs for data gathering.” (‘749 at 5:35-38) In other words, by developing an “operating instruction system”, it becomes possible both for non-technical users to develop device-independent surveys and for units on intermittent networks to rapidly receive and execute them. The specification refers to the process of converting the questionnaire into this format as “tokens” and “tokenizing” (‘748 at 5:25 and 5:55, respectively). The result is a questionnaire that can be readily executed on a wide variety of devices and requiring minimal bandwidth to transfer (both to transfer questions and to transfer results).

31. Another goal of the invention is to create questionnaires that can adapt to responses. For example, “the questionnaire designer might desire to create a form that asks the user different questions; depending on whether the user was male or female.” (‘748 at 8:62-64) The specification sometimes refers to this as “branching logic” (*e.g.* ‘748 at 8:34 and 12:16). An important result of this is that two different people can be presented the same questionnaire but be asked different questions depending on earlier responses. In other words, the questionnaire can be tailored or targeted.

32. In one embodiment in the specification, a “secret shopper” is able to describe a restaurant experience (‘748 at 10:37-11:42). First, one sets up and deploys a questionnaire that a secret shopper can use to evaluate a restaurant’s level of service. Second, a secret shopper access and fills out the questionnaire. For example, as the shopper enters the parking lot, the store’s location and store number are entered automatically using GPS technology. As the shopper orders and obtains the food, subsequent questions about the experience are filled out, such as the temperature of the coffee and the wait time. Third, the results are uploaded using a CDPD modem (an early cellular data modem, as explained above) for subsequent data analysis.

33. To recap, the ‘748 Patent teaches and claims a system to create tailored machine-independent questionnaires with branching logic, deploy and execute the questionnaires, and gather the data from filled-out questionnaires automatically and quickly. It also teaches and claims that the questionnaires can be customized depending on location. These features overcome acknowledged shortcomings in the prior art.

34. The benefits also lie in the synergistic combinations of these capabilities. For example, by using GPS to obtain a location automatically, a questionnaire can be designed, deployed, and executed with branching logic to present questions relevant to that location.

VI. Validity

35. The Defendants' expert, Mr. Stephen Gray, has asserted that the '748 Patent is not eligible for patenting.

36. After noting the Court's decision that the patent is drawn to an abstract concept, the bulk of the report outlines Mr. Gray's opinion that the subject matter of claim 7 is drawn to routine and conventional technical elements, such as GPS receivers. That is, the bulk of the report asserts that individual elements of the claims were each routine and conventional.

37. His analysis of the claim as a whole is found in only three paragraphs at the end of the report:

Claim 7 as a whole.

139. The limitations of Claim 7, when considered as a whole, do not supply an inventive concept.

140. Further, there is nothing unconventional or non-routine about the limitations when considered together. The claim's steps take a logical order, wherein a questionnaire is designed, then it is transferred, then it is executed to collect responses, one of the responses is supplied by a GPS receiver (which is providing location information, the conventional use of GPS technology), and those responses are then transferred to a central computer that then makes them available via the Internet. At each step, the claimed generic technology is used for its conventional purpose, and the combination of steps does not alter the conventional use of any particular element.

141. Accordingly, it is my opinion that Claim 7 does not supply an inventive concept.

Gray Report, ¶¶139-141

38. There are numerous flaws in this analysis.

A. Claim 7 is not drawn to an abstract idea

39. Mr. Gray does not provide any analysis of the first part of the two-part test for patent ineligibility. He asserts that Claim 7 is drawn to an abstract idea based solely on a decision of this Court on an early motion to dismiss. I express no opinion about whether that decision is binding or not on the merits decision that must be made at this stage of the litigation. It is, however, my opinion that for the specific reasons described below, claim 7 is not drawn to an abstract idea.

40. My understanding is that the Defendants have presented “the 748 Patent as simply taking a manual task (collecting data on paper) and teaching how to do it on a computer.” (Fall Line’s Opposition to Defendant’s Motion to Dismiss Pursuant to Rule 12(B)(6) for lack of Patent Eligible Subject Matter”, p. 6)

41. There is a factual flaw in this assertion. Specifically, the 748 Patent specification begins with existing technological obstacles, such as creating questionnaires on a computer, delivering questionnaires over intermittent networks, and advances in location-measuring equipment, (*see, e.g.*, ‘748 at columns 1-4) and offers technological solutions to them. As explained above, and in my previous report, the specification teaches and claims specific solutions to existing shortcomings with technological systems. It is not proposing to computer-automate a pencil-and-paper process; it is proposing to improve an existing technological method.

42. Further, the subject matter of the claim is concrete and specific, not abstract. While it is true that the claim steps are implemented in electronic form, that does not render them “abstract”. The claim steps include specific details such as creating machine-independent questionnaires with branching logic, deploying the questionnaires over intermittent networks, automatically acquiring location information from an integral GPS receiver to answer some of the questions, and gathering the data from filled-out questionnaires automatically, quickly, and over unreliable networks. These are detailed, specific steps.

B. Claim 7 contains several inventive concepts

1. Integrated GPS

43. Limitation 7(a) requires “designing a questionnaire including at least one question said questionnaire customized for a particular location” and limitation 7(b) requires “automatically transferring said designed questionnaire to at least one loosely networked computer having a GPS integral thereto.” The Court has ordered that “GPS integral thereto” means “GPS receiver integral thereto” and “said GPS” means “said GPS receiver.” The Court has ordered that “automatically transferring” means that “transferring that is not initiated upon direction of the user.” Limitation 7(d) further adds “using said GPS to automatically provide said location identifying information as a response to said executing questionnaire”.

a) An Integrated GPS was inventive

44. During the relevant time period, the use of an integrated GPS receiver unit to automate the collection and use of location identifying information for purposes of customizing a questionnaire (hereinafter “integrated GPS”) was an inventive concept.

45. Prior to the priority date and the conception date, GPS receivers were generally large bulky items that a person of skill in the art would not consider combining with a portable computing unit to fill out questionnaires. For example, when the Clark reference was filed in 1995, the inventor stated that “prior art devices are either bulky and require exterior cabling from a backpack unit . . . or do not provide a graphic user interface.” Clark at 2:46-49. In 1997, when the Alexander I reference was filed, the inventor connected an “eight-channel TRIMBLE GPS receiver” to the port of a handheld device. Alexander I at 12:19-21. Even by 2001, a TRIMBLE GPS receiver was something that needed to be carried in a backpack. See e.g., page 27 of Trimble GPS Pathfinder Systems Receiver Manual (dated 2001). This is not surprising, since up until May of 2000 the government intentionally degraded public GPS signals making GPS much less useful for civilian purposes. See <https://www.gps.gov/systems/gps/modernization/sa/>. Moreover, integrating a GPS with a computing device using that same operating system so that the GPS could automatically populate a questionnaire was not something known to persons of skill in the art prior to the priority date and the conception date. This is why, in

the 2006 research article about tuberculosis field studies cited above, the authors of the paper connected a GPS unit via Bluetooth to a handheld PC – there was no practical way to program a standalone GPS unit to conduct such surveys.

b) Mr. Gray's report does not show that an integrated GPS was well-understood, routine, and conventional

46. Element 7(a) recited a “questionnaire customized for a particular location.” The Court has construed this term to have its plain meaning. Element 7(b) recites a “computer having a GPS integral thereto”. The Court has construed this term and, when the construction is put into the claim, reads a “computer having a GPS receiver integral thereto.” Importantly, the Gray report offers no explanation of this interpretation of this claim limitation.

(1) “GPS integral thereto” aspect of Integrated GPS

47. The vast majority of the references cited in the Gray report recite a separate GPS receiver. For example, the Clark reference expressly discloses a separate PDA and GPS unit connected via a cable. “As shown in FIG. 48, the hand-held data collection device 200 of the present invention is comprised of a PDA such as a Newton© 202 ... along with a combined GPS/GPRS receiver 204, both of which are conveniently held by a boot 206 in a single hand-held configuration. The receiver 204 is connected by cable 208 to the standard input of the PDA 202...” (Clark at 12:3-9)

48. Paragraphs 74 to 78 of the Gray report discuss two references that Mr. Gray claims shows that the Benefon reference and 117 patent show that “mobile communications and the ‘known’ techniques for communicating GPS information to wireless devices” means that the inventive concept of an integrated GPS was known as of the 748’s priority date. As an initial matter, as explained below in section VI.D.1, the Benefon reference is not reliable and likely post-dates the priority and conception dates. Likewise, the 117 patent was not public information until after the priority and conception dates.

49. Even if the Benefon and 117 patents were evidence of what was well-known, routine, and conventional, these references do not address the key inventive concept. There is nothing that Mr. Gray has pointed to that shows that either reference discloses the use of an integrated GPS receiver unit to automate the collection and use of location identifying information for purposes of customizing a questionnaire.

50. The chart in the Gray report cites additional 25 references with regard to claim limitation 7(b). Of the 25 references that are charted for limitation 7(b), Mr. Gray only attempts to show that 16 of them even generally disclose GPS. Of those 16 references, only 4 were public prior to the earlier-proposed conception date of the 748 patent (Chen, Hancock, Kari, and Parasnis). Of the 16 references, while they may mention GPS, 11 of the references either make clear that the GPS is separate from the main device or are silent on the issue. Citations from only five of the

references (Barbosa, Mault, Haken, Steele, and Alexander II) address the issue of whether the GPS receiver is “integral thereto.”

51. Barbosa discloses a “position module 46 to enable the handheld device to utilize positioning systems . . . GPS.” Gray at 53. A module can be internal or external and thus this is not an explicit disclosure of an integral GPS.

52. Mault discloses that the “GPS module and portable computer may form a unitary device.” This is the only reference out of the 25 Gray cites for this limitation, that shows a GPS that is part of the same device as the information collecting device. But this was considered an invention in April of 2001 when the application was filed. Further, this application was not published until November of 2001, which was after the earlier-proposed conception date of the 748 patent. And even if it was published before the conception date of the 748, a single published patent application months before the 748 patent was filed, does not show that the concept of an integral GPS was well-known.

53. Haken discloses that a “cellular telephone or a wireless pda that includes position-determining functionality (e.g. GPS, Snaptrack, other e911 service etc).” Gray at 64. Just because a device includes “position-determining functionality” does not mean that such functionality is actually done inside of said device. Another possibility is that the Haken device communicates or is otherwise coupled with an actual separate GPS receiver.

54. Steele discloses “communicating with a retailer computer 155 on the premise or a position locator service, such as GPS” and that the handheld “utiliz[es] BlueTooth, GPS, or other device locating/detection protocol(s)).” Gray at 65. These quotes indicate that the handheld device utilizes GPS, but do not indicate that the GPS receiver is inside or otherwise integral to the handheld device. As with Haken, another possibility is that the device communicates or is otherwise coupled with an actual separate GPS receiver.

55. Alexander II discloses the “ability to obtain GPS positioning information” and “circuitry to obtain real-time GPS information.” Gray at 65. These quotes indicate that the handheld device utilizes GPS, but do not indicate that the GPS receiver is inside or otherwise integral to the handheld device. As with Haken and Alexander II, another possibility is that the device (or circuitry) communicates or is otherwise coupled with an actual separate GPS receiver. For example, the device could be communicating with an actual GPS receiver that is separate from the actual device.

56. The 4 references that were publicly available prior to the earlier-proposed conception date of the 748 patent (Chen, Hancock, Kari, and Parasnis), clearly do not disclose an integrated GPS device.

57. Chen states that a “survey device[] with the capacity to gage position from local position indicators or from GPS could be appropriate.” Gray at 63-64. This in no way indicates that a GPS receiver is inside of the survey device. In fact, since

local position indicators are external, it seems likely that the GPS that Chen is referring to would also be external.

58. Hancock states that “the examples of a cellular network and a GPS system should not be construed to limit the scope,” and that “the wireless communication feature of the present invention can also be used to implement ALI functionality GPS.” Gray at 54. The first quote says nothing about where or how the GPS system is implemented, and given that Hancock was filed in 1999 (prior to any significant use of GPS in the commercial space), it is very likely that Hancock was referring to an external GPS system. The second quote does not refer to GPS at all, but instead refers to the Automatic Location Information (“ALI”). A person of ordinary skill in the art would have understood that GPS and ALI are not equivalent. Unlike GPS, which uses satellites to triangulate a device’s location, ALI uses a database that correlates a phone number with an address.

59. Kari states that “The means for defining the location (not shown) are advantageously formed in the telecommunication network, but also a separate locating system can be used, such as the GPS system (Global Positioning System).” Gray at 54. The Kari reference specifically states that the GPS system is a separate system from the device at issue.

60. Parasnis states that “information is shown on one into two parts divided window on an ordinary portable computer, which is equipped with a GPS-receiver.

The accuracy of the position information is improved by means of differential GPS, DGPS.” Gray at 56. This does not disclose an integral GPS. A computer this “equipped with a GPS-receiver” could be a computer that has an external connection to a GPS-receiver (as was likely the case since Parasnis was filed in 1999 prior to any significant use of GPS in the commercial space). The indication that the invention could use DGPS further shows that any GPS receiver was likely external. S. DGPS requires two GPS receivers that are required to be set up at separate locations, hence they would almost certainly be external to the device described in Parasnis.

61. There are five references that became available after the earlier proposed date conception (Aug. 1, 2001) and the later proposed date (Jan. 1, 2002). Aufricht makes no reference to GPS. Bandera merely refers to the use of GPS and offers no description of how it is to be connected to a handheld device. Thorne only mentions GPS once (9:29) with no mention of how it is integrated. Wesley makes no mention of GPS. Mault is discussed in detail above.

(2) “Automatically Transferring” aspect of Integrated GPS

62. The Gray report only specifically addresses the “automatically transferring” limitation in paragraphs 111 to 120. Below is a summary those paragraphs:

- Paragraph 111-Mr. Gray appears to believe that there have been certain concessions during litigation. Based on my understanding this is incorrect.

- Paragraph 112-Mr. Gray simply states two agreed claim constructions, but in no way analyzes or utilizes them.
- Paragraph 113-Mr. Gray claims that the 748 patent “does not suggest any element in limitation 7(b) would not have been well-known, routine, or conventional to a POSITA as of 2002.” The basis of this is that the patent states that “useful subsystems, which may already be present in the handheld device, or easily added later.”
- Paragraph 114-Mr. Gray claims that since the specification does not explain how to equip a handheld device with a GPS receiver that is somehow evidence that limitation 7(b) was “ubiquitous and well-known in the art.” I disagree. Just because an invention is described at a high level, does not mean that it is not an invention.
- Paragraph 115- Mr. Gray points to his table as evidence that limitation 7(b) was well-known. I disagree. For example, see paragraph 62 below.
- Paragraph 116-Mr. Gray calls out three references in an attempt to show that the concepts in limitation 7(b) are well known. But nothing Mr. Gray points to in Hancock, Barbosa, or Alexander II address the issue of transferring a questionnaire (or any information for that matter) where the transferring is not initiated upon direction of the user. The only reference that even come close to addressing this issue is Hancock, but “automatically identifying a caller’s geographical location” gives no indication of whether the transfer of information would occur without being initiated upon direction of the user.
- Paragraph 117-Mr. Gray states he has seen no evidence that an integral GPS device was not well-known, routine, and conventional. But based on my understanding, Mr. Gray this backwards. It was McDonald’s obligation to show that the integral GPS device was well-known, routine, and conventional.
- Paragraph 118-Mr. Gray claims that “the ‘748 Patent does not even explain how to integrate a GPS receiver with a handheld device or how to use such an integral receiver to provide location information. It presumes a POSITA would have known these details already, which a POSITA would have because it was well-known, routine, and conventional as of 2002.” As with

Paragraph 114 above, just because an invention is described at a high level, does not mean that it is not an invention.

- Paragraph 119-Mr. Gray cites an unrelated court case that stated that a “GPS device is a well-known generic computer element.” But this case doesn’t just involve a GPS device, it involves an integral GPS that is used in a very specific way.
- Paragraph 120-Mr. Gray concludes that limitation 7(b) does not supply an inventive concept.

63. The chart in the Gray report cites 25 references with regard to claim limitation 7(b). He further highlights certain limitations that he attempts to show are found in certain references. For “automatically” limitation, Mr. Gray does not highlight that limitation or even attempt to point to a single reference that includes this limitation.

64. In connection with claim limitation 7(e), the Gray report only specifically addresses the prior art in ¶132. The only citation (to Richards) is about “periodic synchronization” and so the connection between the citation and the claim limitation is unclear. In Richards, the periodic synchronization is designed to work with PDAs that are periodically cradled. The ‘748 patent, however, uses automatic transfer of GPS data so that it is available sooner (not just when the device is cradled) and over an intermittent network.

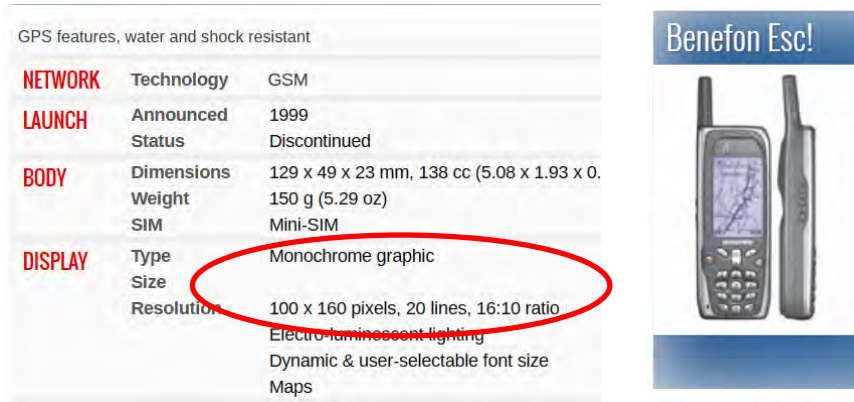
2. The executable questionnaire requirement of Claim 7 is inventive

65. Claim 7 requires “when said loosely networked computer is at said particular location, executing said transferred questionnaire on said loosely networked

computer, thereby collecting responses from the user.” The Court has ordered that this phrase has its plain and ordinary meaning. The Court further ordered specifically ordered that for a questionnaire to be “executable” the questionnaire must be “of, pertaining to, or being a program file that can be run’ and includes JAVA and markup languages (XML, HTML, JSON, etc.)” The Court has further ordered that a “loosely networked,” means “tolerant of intermittent network connections and tolerant of the type of network connection available”. During the relevant time period, the use of executable program languages such as JAVA and/or markup languages both to design a questionnaire and to allow a questionnaire to be executed on a remote handheld computer without the need to recompile and reload a software package onto a computer that has intermittent network connections (hereinafter “tokenization scheme”) was an inventive concept.

66. a) *The executable questionnaire approach was inventive*

67. To run a questionnaire implemented in JAVA and/or markup languages, a user-interface system akin to a Web browser is needed. While it is clear that general-purpose Web browsers were available prior to 2000, it is important to note that cell phones could not run them. For example, the Gray report cites a Benefon ESC! Phone. It fails to mention that this phone has a resolution of 100x160 pixels:



Source: Images from https://www.gsmarena.com/benefon_esc!-44.php, accessed on 1/27/2023, emphasis (red circles) added

68. The phone that was highlighted in the Gray report as a paragon of cell-phone technology had a monochrome display of 100 x 160 pixels or about 20 lines of text. It had a 12-key keypad with 3 extra keys. It was clearly not capable of running anything akin to a Web browser. Even if some sort of questionnaire could be presented on it, the user interface would be text-based and awkward to use. Entering data would be hard with the keypad and only a small number of textual questions could be presented. Even if *arguendo* one asserted that this could execute a questionnaire, it was by no means routine or conventional to do so on such a primitive display with a primitive keypad.

69. While it was true that cell phones and handheld computers existed, there was no unifying software system that enabled running one set of executable content on multiple devices. For example, cell phone manufacturers proposed the WAP standard for applications. (Brien Posey, Wesley Chai, “Definition Wireless

Application Protocol”, available via <https://www.techtarget.com/searchmobilecomputing/definition/WAP>, accessed on 1/27/2023). However, “WAP did not experience widespread adoption in many countries.” (*Ibid*) In other words, a widely known proposed standard to unify application development on cell phones did not take off.

70. The cited article also explains a shortcoming of running conventional Web browsers on a cellular network: “The WAP protocol was optimized for the high-latency, low-bandwidth mobile networks of the time, *which were notorious for dropping the connection before a page could fully render.*” (*Ibid*, emphasis added) In other words, conventional Web browsers functioned poorly, and the wireless networking world needed a standard way to transfer data that was tolerant of this type of intermittent, low-bandwidth connection.

71. Handheld computers suffered other limitations. For example, many did not have a WiFi connection, and almost none had a cellular connection. There was no standardized way to create applications that could run on both cell phones and handheld computers. Worse yet, they used conventional Web browsers which, as noted above, “were notorious” for not working correctly over a cellular network.

72. In an effort to see how routine this was, I accessed IEEEXplore, a database of over 5.8 million articles in electrical and computer engineering. The earliest reference to an article containing the words “cell phone” and “web browser” was

2008. The earliest reference to an article containing the words “mobile phone” and “web browser” was 2003.

73. The article from 2003 (D. Bovenzi *et al.*, “Enabling Legacy System Accessibility by Web Heterogeneous Clients”, *Seventh European Conference on Software Maintenance and Reengineering, 2003. Proceedings.*, Benevento, Italy, 2003, pp. 73-81.) describes using WAP and XML to create a system for entering form-based data over a user interface. Importantly, it shows how this type of activity was considered new and original, to the point where it was published as a technical advance at an engineering conference, in 2003. In other words, this was not routine or conventional.

74. To recap, having a system that can execute questionnaires on different systems over intermittent networks was neither conventional nor routine in 2000-2002.

b) Mr. Gray's report does not show that the tokenization scheme of Claim 7 was well-understood, routine, and conventional

75. Conversely, the Gray report does not even attempt to show that executable questionnaire approach of Claim 7 was well-understood, routine, and conventional. The Court's constructions related to limitation 7(c), which correlates to this inventive concept, requires and executable program languages such as JAVA markup languages and a computer that is tolerant of intermittent network

connections. The citations from the Gray report for limitation 7(c) do not mention specific programming languages and, as noted below, do not mention operation over “loose networks”.

76. For example, in the table for 7(c), the passage from the Bandera reference merely recites presenting an advertisement. The passage from Parasnis mentions clickable icons on a map but has no disclosure of how such a display was constructed. Neither discloses whether such a display was capable of being created over an intermittent network. Other color-coded citations have nothing to do with tokenization and/or questionnaires executing on remote devices via intermittent networks. Most of the citations have no color-coding and therefore are not relevant. None of the citations reference Java or a markup language or disclose any particulars about executing a questionnaire on a user device. The text portion of the discussion of 7(c), found in ¶¶121-124, merely cites back to the table.

3. The “loosely networked” connection scheme is inventive

77. Claim limitation 7(b) requires “automatically transferring said designed questionnaire to at least one loosely networked computer having a GPS integral thereto”. Specifically, it requires that the claimed computer be “loosely networked”. Both parties have agreed on a construction of these terms, *viz.* “tolerant of intermittent network connections and tolerant of the type of network connection available.” Limitation 7(e) further requires “automatically transferring via the loose

network any responses so collected in real time to a central computer.” In other words, the claim expressly requires that both the “automatic transfer” of the questionnaire and the automatic transfer of questionnaire responses occur over a “loose network”.

a) Transferring questionnaires and responses over loose networks is inventive

78. As explained above in connection with the executable questionnaire requirement, Web browsers of the era were intolerant of intermittent networks. (“... the high-latency, low-bandwidth mobile networks of the time ... *were notorious for dropping the connection before a page could fully render.*” (Definition of WAP, *op.cit.*, emphasis added) Even today, 20 years after the dates of invention, it is common to see a Web browser post an error if there is even a temporary hiccup in connectivity.

79. Difficulties using existing networks to deploy questionnaires and obtain replies are described in depth in the ‘748 patent’s Background of the Invention. “It can be seen that perhaps the greatest drawback to using a handheld for data gathering as part of a larger system are the limitations of the data link: 1) it is unlikely that the data link will always be available; and 2) the bandwidth of most of the practical wireless options is restrictive.” (‘748 at 3:64-4:1. *See also* 3:21-4:17 generally.)

80. Functioning correctly over intermittent networks is difficult. It generally requires transmitting data in short bursts, holding data until a network connection is

available, and retransmitting if data fails to transmit correctly. In other words, it requires careful design.

81. To address issues of intermittency, the ‘748 Patent proposes an executable questionnaire approach, discussed in further detail above. This approach is proposed specifically to address this issue. “It is yet a further object of the present invention to provide an operating system for a handheld computer wherein programming steps and data are tokenized to reduce the load on a communication channel of finite bandwidth.” (‘748 at 4:36-39.) In other words, the ‘748 patent inventively solves the intermittent-network problem by using questionnaires that are executable.

b) The Gray report cites no evidence to the contrary

82. In connection with claim limitation 7(b), the large table in the Gray report makes citations to 24 different references. Of these, only one mentions network unreliability or intermittency (the citation to Richards), and the reference treats network unreliability as a problem to be fixed, not an intrinsic aspect of mobile or wireless networks. In connection with claim limitation 7(e), the large table in the Gray report makes no attempt to cite any references in connection with “loose” networks. There is also no mention of intermittent network connections in the text portion discussion limitation 7(b) (¶¶111-120) and 7(e) (¶¶130-133).

4. Having a questionnaire customized for a location is inventive

83. Claim 7(a) recites “designing a questionnaire including at least one question said questionnaire customized for a particular location.”

a) Having a questionnaire customized for location is inventive

84. With regard to this limitation, an example of the state of the art in 2005 is found in the research article listed above. In the article, field researchers used GPS to find residences and to log locations. The forms that they were submitting were not customized for a specific location; rather, the forms asked for location as an input or directed the user to a specific location.

85. As explained above, user interfaces for cell phones were quite primitive, with small monochromatic displays and lacking a fully integrated GPS capability. Handheld PCs had better displays but no cellular access. In other words, devices of the day did not combine graphical displays and location-aware integration. It is clear that having a questionnaire customized for a specific location was therefore inventive.

86. Conversely, the ‘748 Patent teaches using integral GPS to improve the handheld-computing device by causing location information to be automatically collected, creating questionnaires that are customized for particular locations, and executing questionnaires when the handheld-computing device reaches a certain location. (‘748 Patent at 5:33-48; 8:56-61; 10:55-65.)

b) The Gray report cites no evidence to the contrary

87. The chart in the Gray report cites 25 references with regard to claim limitation 7(a). He further highlights the “one question said questionnaire customized for a particular location.” But unlike the other limitations that Mr. Gray highlights, he

does not point to a single reference that includes this limitation. There is no disclosure in the Gray report showing that any reference discloses “questionnaire customized for a particular location.” Since this is a key part of the inventive concept of an integrated GPS, this is fatal to Mr. Gray’s attempt to show that the 748 patent does not include an inventive concept.

5. The ordered combination of claim limitations is inventive

88. The Court has ordered that “the steps of Claim 7 must be performed in the following order: (a) must begin before, but can overlap with (b); (b) must begin before, but can overlap with (c); (c) must begin before, but can overlap with (d) and (e); (e) must begin before, but can overlap with (f).”

a) The ordered combination of claim limitations is inventive

89. The limitations of claim 7 of the ‘748 patent work together. For example, the specification explains how the ability to express the questionnaire in a markup language enabled operation over intermittent networks. The claim language requires not only a device with a GPS receiver “integral thereto” but also that the GPS information be collected automatically and be used as the basis of a questionnaire customized to location.

90. The passages above explain how specific aspects of the claim were inventive. The combination is even more so. For example, designing a questionnaire using a markup language to automatically download an executable file to access GPS data on a user device to provide location customization, all over an intermittent network,

was even more inventive than integral GPS by itself. The order of operations is significant – one must design a questionnaire using a markup language to make it efficient for automatic transfer and execution, for example. Therefore the order of operations is inventive.

b) Mr. Gray's report does not show that the ordered combination of the elements of claim 7 was well-understood, routine, and conventional

91. In its construction, the Court has found that the steps of claim 7 must occur in a specific order. In other words, the order of steps is an indispensable element in analyzing the claimed invention.

92. This is important because the Gray report completely overlooks the order of claim elements, opting instead to attempt to show that each individual claim element, considered in isolation from the others, was routine and conventional. As noted above, this is a fundamental flaw in the Gray report – it ignores the Court's construction.

c) The Gray report fails to consider combinations of claim elements

93. The Gray report argues that if each claim element is routine and conventional, then the entire claim is routine and conventional.

94. It is my understanding that this is simply incorrect. For example, when I was developing digital video recording (DVR) set-top boxes at Scientific-Atlanta, we became aware of the Barton "Time Warp" patent on DVR. The patent is drawn to

creating a list of data entries from a stream of incoming data, and specifically does not assert to invent the act of recording digital video. Each of the pieces (*e.g.* creating a list, parsing a stream of data, recording digital video) was routine and conventional. However, the patent was regarded as valid – the novelty of the patent lied in the *combination* of elements.

95. The Gray report’s entire analysis of the combination of claim elements is found in three paragraphs. In fact, the only substantive analysis is found in the report is found in two sentences: “Further, there is nothing unconventional or non-routine about the limitations when considered together. ... At each step, the claimed generic technology is used for its conventional purpose, and the combination of steps does not alter the conventional use of any particular element.” (Gray report, ¶140)

96. The Gray report does not cite any rational underpinning for its conclusion that “the combination of steps does not alter the conventional use of any particular element”. Even overlooking the lack of evidence, the logic is flawed. The steps in a method can be synergistic, arriving at behavior that is more significant than the mere sum of the component steps, without altering the steps themselves. A combination of steps can be unconventional even if each step is conventional.

97. My understanding is that proving invalidity requires that the Defendant show with clear and convincing evidence that the patent is not valid, and that the patent is presumed valid until or unless this occurs. Here, the Defendant presents no

evidence, other than a mere conclusory sentence, that the combination of steps in claim 7 is routine and conventional. Worse yet, it does not even attempt to assert that the *ordered combination* of steps in claim 7 is routine and conventional – the issue of ordering is never addressed.

98. For example, if one reference mentions one feature and a second reference mentions a different feature, it does not mean that an invention disclosing both features is routine or conventional.

99. First, one must show that the feature found in the first reference can be combined with the feature found in the second reference. There may be factors that make the use of both features unconventional. Importantly, it is the Defendant's burden of proof to show that the combination is conventional, and the Gray report has not done that. In fact, it does not even attempt to do so.

100. Second, if one feature is found in an earlier claim step, one must show that the feature found in the first reference can be applied prior to the feature found in the second reference. There may be factors that make the order of features unconventional. Importantly, it is the Defendant's burden of proof to show that the order of combinations is conventional, and the Gray report has not done that. In fact, it does not even attempt to do so.

101. To the extent that McDonald's can point to specific claim limitations and assert that each was routine and conventional, it cannot explain how the ordered combinations of claim limitations was routine and conventional.

C. Other Flaws in the Gray Report

1. The Report makes no attempt to apply claim construction

102. Noticeably lacking from the Gray report is any mention of the claim construction in this case. (To be clear, a final Claim Construction order had not been issued as of the date of the Gray report, but both sides had agreed to constructions and proposed constructions. Moreover, the Court had already issued its construction of "executable." The Gray report does not mention or take into account any construction, either proposed or issued.) The result of this is that the report attempts to cite art that renders elements of the asserted claim routine and conventional without taking into account what the elements actually are.

103. One example of a relevant construction is that of "questionnaire". The Court has construed the term to mean "a program or form that includes a question or statement, which calls for a response". The specification echoes the proposed construction: "According to the preferred arrangement, data may be gathered by prompting the user via the handheld 28 with a series of questions or statements, each of which calls for a response." ('748 at 8:25-28.)

104. The Gray report cites the Bandera reference connection with claim limitation 7(c). The citation from Bandera describes selecting and sending an advertisement as part of a Web page. However, it is clear that an advertisement does not read against the proposed construction because an advertisement does not necessarily call for a response. In other words, the report overlooks the claim construction of the term and so is incomplete.

105. Similarly, it is impractical to assert that elements of the claim such as “loosely networked”, “executing / executable”, and “requests location identifying information” are routine and conventional without first acknowledging what these terms actually mean in light of the constructions, either issued or proposed.

106. Nowhere is this oversight more egregious than the Gray report’s complete inattention to the order of claim steps. The Court’s construction makes clear that there is at least some ordering of claim steps. (Specifically, the Court’s construction effectively takes the position that “Steps must be performed in order only as dictated by the logic of the claim language” and then adds some specific details.) In other words, steps must be performed in *some* order. The Gray report makes the argument that the elements of the claim were routine and conventional while completely overlooking the fact that both parties have agreed that much of the significance of the claim is derived from the order of steps. In other words, the Gray report’s

assertion of “routine and conventional” assumes no specific order of claim steps. In fact, it does not even discuss any combination of claim steps.

2. The Report uses Patents and Patent Applications to Describe “Routine and Conventional” Technology

107. The Gray report points to patents to ascertain the novelty of items found in claim terms, such as GPS receivers or portable devices with Web browsers. This is a fundamental mistake.

108. As an aside, patent specifications contain several sections. One common section is the “background of the invention”. Here, the patent author generally describes existing systems and something found in this section might be routine and conventional. The rest of the specification deals with the actual invention (*i.e.* the subject matter of the patent) and this part of the specification deals with the aspects of the patent that are truly new and different from the prior art. To be clear, the discussion below is focused on the part of the patent that deals with the actual invention, the subject matter of the patent.

109. It is important to remember that companies submit patent applications long before the products that embody the patents are sold or in use. Indeed, companies are obligated to do so – publishing an article on a product or manufacturing and selling a product can disrupt patent rights. My experience at Scientific-Atlanta was that we were strongly encouraged to file invention disclosures and patent applications as soon as possible. All of the patent applications that were filed based

on my invention disclosures were submitted long before any product practiced the invention. In other words, patents may document what was in design at the time, but they do not document what was routine and conventional at the time. The systems described in patents are, by definition, not routine or conventional – if they were, the patent would not be valid.

110. Moreover, I understand that during the relevant time period (prior to 2002) non-provisional patent applications were kept secret and were not published until at least 18 months after the filing date. And provisional patent applications were only made available to the public after the patent issued. Clearly, something that is secret cannot be used as evidence of what was routine or conventional.

111. The Gray report, conversely, cites to patent specifications routinely. For example, in connection with step 7(a), the report cites to 25 different patents and patent applications. It makes no attempt to explain whether the cited passage discusses what the patent asserts is prior art or whether the cited passage discusses a new invention.

112. For example, that section contains 11 citations from the Mault reference, ranging from page 6 to page 22. All of these citations are found either in the “Summary of the Invention” or in the “Detailed Description of the Invention.” These citations describe the invention that Mault was attempting to patent. If the subject matter of Mault’s invention was routine and conventional, neither he nor the

company he worked for (apparently HEALHTECH) would have wasted the time or money to file the application in the first place. The subject matter of Mault's invention does not educate one about what was routine or conventional at the time – rather, it educates one about that which was not routine or unconventional, that which was new and different, at the time.

D. Flaws in the Cited Art

113. I prepared a chart that summarizes the 33 printed publications cited in the detailed table of citations found in the Gray report, shown below.

	7a	7b	7c	7d	7e	7f	Public
Aarnio	1	1	1		1	1	5/4/2001
Alexander I	1	1		1	1	1	7/4/2000
Alexander II	1	1		1	1	1	10/3/2002
Anegg	1	1		1	1	1	2/1/2002
Aufricht	1	1		1		1	12/13/2001
Bandera		1	1	1	1		12/18/2001
Barbosa	1	1	1	1	1	1	9/17/2004
Barnard	1	1			1	1	9/24/2002
Benigno	1	1			1		7/8/1999
Brookler	1	1			1	1	1/17/2002
Callender	1						8/29/2002
Chen	1	1		1	1	1	6/14/2001
Clark	1	1	1	1	1	1	12/16/1997
Dodgen	1	1	1		1	1	9/17/2002
Durocher			1	1			4/30/2002
Ell	1	1		1	1	1	4/4/2002
Fratkina		1		1	1		3/10/2005
Gershman					1	1	3/12/2002
Haken	1	1		1	1	1	7/3/2003
Hancock		1	1	1	1	1	3/13/2001
Holloway				1		1	2/13/2003
Kari	1	1	1	1	1	1	11/28/2000
Mault	1	1		1	1	1	11/8/2001
Newton	1	1		1	1	1	1994
Parasnis			1	1			8/23/2000
Richards	1	1			1	1	10/10/2002
Shao	1					1	12/18/2007
Spaargaren	1		1	1			2/28/2002
Steele	1	1		1	1	1	10/10/2017
Thorne		1		1	1	1	11/1/2001
Todd	1	1			1		4/30/2002
Vindigo	1	1		1	1	1	2/1/2002
Wesley	1			1		1	10/2/2001

114. Two of the references cited in the Gray report (Fraktina and Steele) appear to have been misidentified. I believe that Mr. Gray meant U.S. Patent No. 7,337,158 when he referred to Fratkina (not 7,539,850 as cited in paragraph 104 of the Gray

report). And I believe that Mr. Gray meant U.S. Provisional App. Pub. No. 60/374380 when he referred to “Steele” (not 60/37438 as cited in paragraph 104 of the Gray report).

115. All of the references with a green color in the “Public” column were not available publicly until after the date of the provisional patent application. All references with yellow in the “Public” column were not available publicly until after the later-proposed date of conception, which I have assumed (for reasons explained below) to be January 1, 2002. All references in blue in the “Public” column were not publicly available until after the earlier-proposed date of conception, which I have assumed (for reasons explained below) to be August 1, 2001. As explained below, the ‘748 Patent is entitled to the date of the provisional patent application and to the date of conception, and so these references were not publicly available. In other words, these references cannot disclose that which was routine and conventional as of the date of the ‘748 patent application – they were not available to the public at that time. Of the 33 references cited, only 9 were publicly available before the earlier-proposed date of conception and only 14 were publicly available before the later-proposed date of conception..

116. Even if *arguendo* the ‘748 patent is not entitled to the either date of conception, the “yellow-colored” and “blue-colored” references were only made public a few months before the date of the provisional patent application. In other

words, they had only recently come to light, representing the leading edge of technology rather than that which was routine and conventional. Further, as explained above in section VI.C.2, patents and patent applications represent future inventions at the moment of filing.

1. Many Cited References are Questionable

117. Many of the references cited in the Gray report are of questionable value.

118. The Gray report asserts that the Benefon ESC! Phone was launched in 1999 based on a reference to a single Web page. (Gray report ¶74). There is considerable evidence that this is not so. Two articles in well-known magazines assert that the phone was “released” and “announced” in Spring or Summer 2001. (“Ten O’Clock Tech: Another GPS Phone”, Forbes, Mar. 28, 2001, accessed via <https://www.forbes.com/2001/03/28/0328tentech.html?sh=8df4ad46501f> on 1/19/2023 and “Finland’s Benefon rolls out GSM handset/PDA based on SiRF’s GPS chip technology”, EE Times, July 31, 2001, accessed via <https://www.eetimes.com/finlands-benefon-rolls-out-gsm-handset-pda-based-on-sirfs-gps-chip-technology/> on 1/19/2023). My experience is that articles like these are based on press releases and are forward-looking. Benefon’s own annual report, dated February 2001, states that the phone “are to be lauched (*sic*) to the market in March-April.” (Benefon Annual Report 2000, accessed via

<https://web.lib.aalto.fi/fi/old/yrityspalvelin/pdf/2000/Ebenefon2000.pdf> on
1/19/2023)

119. It is my opinion that the website article that Mr. Gray relies on is not the kind of thing that an expert in this field would consider reliable information.

120. The Gray report cites U.S. Patent 8,892,117 to Obradovich and points to an asserted priority date of April 11, 2000 based on a provisional patent application. The report does not explain why the patent is entitled to the date of the provisional application, and overlooks the fact that that patent was not filed until 2008 and its application was not published until 2004.

2. Many of the Individual Citations are Questionable

121. The bulk of the Gray report consists of a table found on pages 28-109, or about 55% of the page count of the entire report. This table contains numerous citations to 32 pieces of art (as shown in the table above) in an attempt to show how the elements of claim 7 were routine or conventional. Many of these citations are simply factually incorrect.

122. For example, the report cites Clark, Kari, Aarnio, Alexander I, Chen, Mault, and Shao in connection with the “branching logic” limitation of 7(a). As explained in my report on Infringement, branching logic has to do with the property that an answer to one question causes different questions to be presented. Of the cited references, Kari and Alexander I merely describe optimization based on location,

Chen and Mault describe optimization based on personal preferences, and Clark described paring down the number of options in a menu. None of these read against “branching logic”.

123. As another example, the report cites several references in connection with limitation 7(f). Recall that limitation 7(f) requires “making available via the Internet any responses transferred to said central computer in step (e)”. In other words, it requires that the responses (user answers to questions) be made available via the Internet. However, many of the cited references do not line up with this claim limitation.

124. The passage from Kari that is cited merely discloses that the computer of Kari has a two-way Internet connection. The cited passage in Hancock is describing the situation where a user makes a query (“a database query for finding all fast-food restaurants within a five-mile radius”, Hancock at 17:39-41) and receives a response. The passage from Alexander I cited in connection with 7(f) merely references the fact that the computer can receive image data, with no explanation of how this reads against 7(f). The passage from Gershman cited in connection with 7(f) discloses a user receiving their own data. The passage from Barbosa cited in connection with 7(f) merely discloses a computer can receive data from a server.

125. To recap, the block citations found in the Gray report are riddled with inaccuracies and misleading, unsupported leaps of logic. In effect, the report requires

a careful reader to dig through 82 pages of citations of questionable value to find which ones have merit.

3. Many of the Claimed Features are not Found in the Cited References

a) Executing a questionnaire on a loosely network computer

126. Claim limitation 7(c) recites in part “executing said transferred questionnaire on said loosely networked computer”.

127. As an initial matter, the parties have agreed to a construction of “executable”, viz. “ ‘of, pertaining to, or being a program file that can be run’ and includes JAVA and markup languages (XML, HTML, JSON, etc.)”. Based on this, it is clear that the claimed step of “executing said transferred questionnaire” entails running a program file, and a program file can be coded in JAVA and/or markup languages such as XML and JSON. Combining the claim language and the claim construction, it also means that the questionnaire is an executable file and can be coded in HTML, XML, and/or JSON. With regard to “questionnaire”, the Court has construed the term to mean “a program or form that includes a question or statement, which calls for a response”.

128. The Gray report only cites 10 sources in the table entry for claim step 7(c) and, of the citations, only four are purported to read against the “executing said transferred questionnaire” limitation. Of the four, three have no connection to a downloaded questionnaire. One (Kari) merely states that a user can send a reply, one (Barbosa) discloses a program, not a downloaded questionnaire, and one

(Parasnis) merely discloses a map display. The fourth, Bandera, discusses selecting, sending, and displaying an advertisement on a Web page. As explained elsewhere, this is problematic – the report makes no attempt to explain how an advertisement could be considered a “questionnaire”, especially in light of the Court’s construction. The report also makes no attempt to explain how displaying an advertisement meets the agreed-upon construction of “executable” (relevant because the claim term recites “executing”). An advertisement could consist of a single JPEG file, for example, which does not fit the agreed-upon construction.

129. To be clear, the Gray report bears the burden of explaining how this citation reads against the claim limitation because if it does not read against the claim limitation, it cannot render the limitation routine and conventional. The Gray report offers no such explanation and so the citation is not relevant.

b) Loosely Networked Connections and Loose Networks

130. Claim limitation 7(b) requires “automatically transferring said designed questionnaire to at least one loosely networked computer having a GPS integral thereto”. Specifically, it requires that the claimed computer be “loosely networked”. Both parties have agreed on a construction of these terms, *viz.* “tolerant of intermittent network connections and tolerant of the type of network connection available.” In other words, the claim requires that the “automatic transfer” of the questionnaire and the automatic transfer of questionnaire responses occur over a “loose network”.

131. As an initial matter, the fact that the Gray report ignores this construction shows that this section of the report should be given no weight. Even assuming *arguendo* that this oversight can be overlooked, the report is still flawed.

132. In connection with claim limitation 7(b), the Gray report makes citations to 24 different references. Of these, only one mentions network unreliability or intermittency (the citation to Richards), and the reference treats network unreliability as a problem to be fixed, not an intrinsic aspect of mobile or wireless networks. Likewise, in connection with claim limitation 7(c), the Gray report only points to four references in connection with the limitation containing “loosely networked” and none of the four have anything to do with tolerance of intermittent network connections. None of the other citations in 7(c) have anything to do with “loosely networked” either. In connection with claim limitation 7(e), the Gray report makes no attempt to cite any references in connection with “loose” networks.

133. Thus none of the citations in the Gray report pertain to the claim limitations having to do with “loosely networked” computers, under any construction and especially as the term is construed.

E. Claim 7 is not routine or conventional

134. Further, it is readily apparent that the claim is not routine or conventional.

135. First, there are aspects of the elements of claim 7 that were not routine or conventional in 2002. For example, GPS receivers small enough to fit inside

portable products were rare in 2002, and units containing GPS were, by in large, dedicated units specifically for navigation. Smart phones as we know them were non-existent (the iPhone was introduced in 2007) and so cell phones had primitive user interfaces and slow data connections. Handheld computers were only beginning to have WiFi and did not have cellular access. Handheld computers of the era did not have built-in GPS and, indeed, most did not even have built-in WiFi. Further, units such as cell phones and handheld computers were difficult to program, and there was no practical way to write one set of executable content to run on both.

136. One may point to patents on similar items, such as GPS receivers or portable devices with Web browsers, but it is important to remember that companies submit patent applications long before the products that embody the patents are sold or in use. As explained above, patents and patent applications do not necessarily disclose what is “routine and conventional” at a particular time.

137. Second, combinations of all of the elements of the asserted claim were unheard of in 2002. There was no single routinely available or conventional device that could execute questionnaires customized for particular locations using integral GPS receivers and that function over loose networks, much less one to carry out all aspects of the claimed method. These aspects of the claimed invention may be widespread now, but recall that the iPhone was not introduced until 2007, after the

invention by Mr. Payne that was disclosed in the patent application that ultimately led to the issuance of the 748 Patent.

138. An example of how the combination of limitations is important has to do with operation using loosely networked computers. The claim requires that the claimed questionnaire be deployable to “loosely networked” computers and that responses be transferred over “loose networks”. The fact the claim requires operation over an intermittent network imposes limitations on the claimed design of questionnaires (they must be designed to operate correctly and efficiently over an intermittent network connection), the claimed transfer of questionnaires (they must occur correctly in the face of intermittency), and the claimed collection of responses (the computer must hold responses until the network is available, and the server collecting the responses has to tolerate the intermittency). It is not enough to show that one system enabled design of a questionnaire (*e.g.*), another enabled collection of responses, and a third enabled operation over intermittent networks. To read against claim 7, one must show how all of the limitations can be met with a single system. Stated conversely, the combination of steps in claim 7 was not routine or conventional as of the date of the application.

139. As noted above, the research article published in 2006, describing medical research work carried out in 2005, explained how hard it was to use GPS with PDAs and to program PDAs. And that article did not even delve into the system needed to

simplify construction of questionnaires and the development of questionnaires that could run on a variety of systems. If, as McDonald's asserts, such systems were routine and conventional, why didn't the medical researchers just use that system?

F. Claim 7 is eligible for patent protection

140. Claim 7 is eligible for patent protection because the ordered combination of claim elements was unconventional in 2002.

141. To recap, Claim 7 (loosely speaking) claims a method to create machine-independent questionnaires with branching logic, deploy and execute the questionnaires, automatically acquire location information from an in-built GPS receiver to answer some of the questions, gather the data from filled-out questionnaires automatically, quickly, and over unreliable networks, and make the data available to other systems over the Internet.

142. This is eligible for patent protection because a single system to carry out every aspect of this method in the claimed order did not exist in 2002 when the patent was filed. In other words, the claimed method, examined as a whole, was neither routine nor conventional.

143. Many important benefits lie in the synergistic combinations of these capabilities. For example, by using branching logic and by using GPS to obtain a location automatically, a questionnaire can be designed, deployed, and executed to present questions relevant to that location and relevant to each individual user. By

placing the GPS inside a portable device, it becomes easy for persons to engage with the questionnaire almost anywhere. The removal of any piece (*e.g.*, branching logic) makes the overall method much less attractive to non-technical users. The removal of any piece (*e.g.*, making results available over the Internet) also makes the overall method less attractive to companies who want to deploy and use such questionnaires.

144. The asserted claim describes a method that combines into one place all of the elements needed to construct, deploy, execute, gather, and make available the results of a location-dependent questionnaire. It is eligible for patent protection.

VII. Priority Date

A. The Claim is eligible for the priority date of the provisional application

145. The '748 patent claims priority to provisional patent application Provisional application No. 60/404,491, filed on Aug. 19, 2002. My understanding is that claim 7 is entitled to the priority date of this application as long as the claimed steps are supported in the provisional application. The specification found in the provisional application (spanning pages 2-22 of the application) is generally similar to, if not even identical to, the specification of the actual patent application that was later filed. Thus it is clear that there is support for claim 7 of the 748 patent in the provisional application.

146. The following is a table that expresses more specific examples of support in the original provisional application for each claim step.

<p>7. A method for collecting survey data from a user and making responses available via the Internet, comprising:</p>	<p>The present invention relates to a system of computing devices for the collection and management of information. More particularly, but not by way of limitation, the present invention relates to system for collecting and managing information including a plurality of computer devices loosely networked to a server and an operating system for a computer which provides a number of features favorable for use in the inventive system. (Provisional p. 2)</p> <p>3) Allow another computer(s) to access the information and download it from the data center in a format that can be readily used regardless of the format in which the original information was gathered. (Provisional p. 8)</p> <p>As data from a handheld is received at server 24 it is processed, as necessary, and placed in a database where it can be accessed via the internet 26. A client can then use a computer 22 with internet access to review or use the data from virtually anywhere in the world. (Provisional p. 18)</p> <p><i>See also</i> Claim 1 on p. 27</p>
<p>(a) designing a questionnaire including at least one question said questionnaire customized for a particular location having branching logic on a first computer platform wherein at least one of said at least one questions requests location identifying information;</p>	<p>In practice, a program is created by entering a series of prompts and providing direction for how the system is to respond to particular responses. This process may be performed by a person having no programming skill whatsoever. The program may then be sent to all, or selected, computer devices on the network. Those devices having a connection may immediately be updated. Those devices in which a network connection is temporarily not available will be updated when the connection is restored. (Provisional p. 10)</p> <p>According to the preferred arrangement, data may be gathered by prompting the user via the handheld 28 with a series of questions or statements, each of</p>

which calls for a response. This series of questions or statements will have been constructed on computer 22 and reduced to tokenized form for transmission to the handheld 28. For purposes of the instant disclosure, the series of questions/statements will collectively be referred to as a questionnaire. As will be discussed in greater detail below, the questionnaire is actually designed to include internal branching logic which is implemented by the OIS. Hence, with regard to the present invention, the terms "program" and "form" are used interchangeably with questionnaire. (Provisional p. 15)

As the client creates a list of questions, symbols from a tool bar may be used to control conditional branching based on the user's response. As the client enters questions and selects response types, server 24 builds a stack of questions and responses, and assigns indices, or tokens, which point to each question or response. Each token preferably corresponds to a logical, mathematical, or branching operation and is preferably selected and made a part of the questionnaire by "dragging" it from the tool bar and "dropping" it on the selected question. By this mechanism, a user is able to create a series of questions the precise nature of which is dependent on the user's responses. For example, the questionnaire designer might desire to create a form that asked the user different questions; depending on whether the user was male or female. In order to do this, the designer would enter the questions ("Are you a man or woman?"); select a response (a "pop up" list of two entries male and female); select a token (branch if "male"); assign that token to this question; and, specify an "end" location for the "branch" (i.e., the first question asked of "males"). (Provisional p. 15-16)

	<p>In one aspect of the invention branching logic depending on the programs are created for handheld or other computer devices by simply entering questions and providing response questionnaires/programs from the end-user. Thus, no particular programming skill is required to generate for data gathering. As will be appreciated by those familiar with data collection, data can be collected by posing a series of questions, or otherwise prompting for specific input from the user, as in the manner used with paper forms. A number of useful subsystems, which may already be present in the handheld device, or easily added later, so that at least some of the information which is responsive to the designed questionnaire may be collected automatically rather than entered manually, e.g., time and date, position information if the device includes a GPS receiver, etc. (Provisional p. 9)</p> <p><i>See also Claim 1 on p. 27</i></p>
<p>(b) automatically transferring said designed questionnaire to at least one loosely networked computer having a GPS integral thereto;</p>	<p>Turning next to FIG. 5, in contrast, with the present system, a form may be entered on- line, the form is automatically sent to the handheld computer of the user, usually within seconds, the user enters data directly at the location of the user's assigned task, eliminating memory errors, and made available to others in the organization in virtually a real time fashion. Thus, not only is the data almost instantly available, at least two sources of error, the memory of the user and data entry, have been eliminated. (Provisional p. 18)</p> <p>It should be noted that handheld computers 28-32 need not be the same type, or even compatible devices. As a part of the inventive system each remote device, preferably a handheld computer, is provided with an operating instruction ("OIS") system which overlays in its native operating system. Once equipped with the OIS, a remote</p>

	<p>device can be programmed according to methods described hereinafter. Any program developed under the inventive system will run on any handheld computer equipped with the OIS and files on one such handheld will transfer freely to any other handheld or any computer connected to the inventive system. (Provisional p. 14)</p> <p>According to the preferred arrangement, data may be gathered by prompting the user via the handheld 28 with a series of questions or statements, each of which calls for a response. This series of questions or statements will have been constructed on computer 22 and reduced to tokenized form for transmission to the handheld 28. For purposes of the instant disclosure, the series of questions/statements will collectively be referred to as a questionnaire. As will be discussed in greater detail below, the questionnaire is actually designed to include internal branching logic which is implemented by the OIS. Hence, with regard to the present invention, the terms "program" and "form" are used interchangeably with questionnaire. (Provisional p. 15)</p> <p>With regard to the present invention, the term "loosely networked" is used to describe a networked computer system wherein devices on the network are tolerant of intermittent network connections and, in fact, tolerant of the type of network connection available. In particular, if any communication connection is available between devices wishing to communicate, network transmissions occur normally, in real time. If a network connection is unavailable at that moment, the information is temporarily stored in the device and later transmitted when the connection is restored. Unless otherwise specified, hereinafter the terms "network" or "networked" refer to loosely networked devices. (Provisional p. 8)</p>
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	<p>A number of useful subsystems, which may already be present in the handheld device, or easily added later, so that at least some of the information which is responsive to the designed questionnaire may be collected automatically rather than entered manually, e.g., time and date, position information if the device includes a GPS receiver, etc. (Provisional p. 9)</p> <p>If the handheld computer is equipped with a GPS receiver this information could be entered automatically. (Provisional p. 19)</p> <p><i>See also Claim 1 on p. 27</i></p>
<p>(c) when said loosely networked computer is at said particular location, executing said transferred questionnaire on said loosely networked computer, thereby collecting responses from the user;</p>	<p>As the mystery shopper enters the parking lot the shopper will be prompted to enter a store number or location. If the handheld computer is equipped with a GPS receiver this information could be entered automatically. (Provisional p. 19)</p> <p>1) Allow any computer(s) (desktops, laptops, handhelds, portables, etc.) to be used to capture information; (Provisional p. 8)</p> <p>Turning next to FIG. 5, in contrast, with the present system, a form may be entered on- line, the form is automatically sent to the handheld computer of the user, usually within seconds, the user enters data directly at the location of the user's assigned task, eliminating memory errors, and made available to others in the organization in virtually a real time fashion. Thus, not only is the data almost instantly available, at least two sources of error, the memory of the user and data entry, have been eliminated. (Provisional p. 18)</p> <p>Turning next to FIG. 3, in a preferred embodiment the user will initiate the execution of the questionnaire according to instructions previously</p>

	<p>provided to him or her. For example, the user might be instructed to initiate the questionnaire as soon as he or she pulls into the drive-in lane of a take-out eatery. This would be the case if the questionnaire were designed to collect information regarding service at that establishment. In such an event, the questionnaire might contain questions related to service time, cleanliness, friendliness of the employees, etc., all of which would potentially be of interest to the owner/client. The user will preferably respond to each question in turn, the questions being presented according to the logic defined by the client and built into the questionnaire. In some instances, the text of the question might instruct the user to perform acts and/or wait until a certain event happens before responding (e.g., "Pull up to the take-out window. How long was it before you received your order?") The user's responses to the items in the questionnaire are stored within the handheld 28 as they are collected. In some cases, the questionnaire logic might allow the user to skip questions and (optionally) return to them later. Additionally, the questionnaire designer might include a token that initiates a final review of the data collected from the user in this instance to make certain that all "required" questions, (which have preferably been so designated by marking them with the appropriate token) have been answered. Failure by the user to respond to a required question will result in the OIS prompting the user again for a response. (Provisional p. 16-17)</p> <p><i>See also Claim 1 on p. 27</i></p>
<p>(d) while said transferred questionnaire is executing, using said GPS to automatically provide said location identifying information as a response</p>	<p>As the mystery shopper enters the parking lot the shopper will be prompted to enter a store number or location. If the handheld computer is equipped with a GPS receiver this information could be entered automatically. (Provisional p. 19)</p> <p><i>See also citations for 7(b) and 7(c) above</i></p>

to said executing questionnaire;	
(e) automatically transferring via the loose network any responses so collected in real time to a central computer; and,	<p>2) Transfer the information to a data center (via file transfer methods such as a network, to include but not necessarily internet based) in a form that the data center can recognize; (Provisional p. 8)</p> <p>Several options are available for the transmission of responses to from handheld 28 to server 24. First, regardless of the availability of connection 34, responses may be stored locally at handheld 28 until the form is fully completed and then sent as a batch to server 24. This transfer may optionally occur automatically, or upon direction of the user as specified by the client during the creation of the form. If the link is not available at the time of completion of the form, transmission will be automatically delayed until connection 34 is restored. (Provisional p. 17)</p> <p>Alternatively, selected responses, or. all responses, may be configured to transmit immediately upon entry, assuming of course that connection 34 is available. This option is particularly important where the user of handheld 28 has entered information which might be indicative of a problem with a process or indicate an emergency. Again, if connection 34 is unavailable, immediate transmissions will also be delayed until a connection is available. (Provisional p. 17)</p> <p><i>See also Claim 1 on p. 27</i></p>
(f) making available via the Internet any responses transferred to said central computer in step (e).	<p>3) Allow another computer(s) to access the information and download it from the data center in a format that can be readily used regardless of the format in which the original information was gathered. (Provisional p. 8)</p> <p>As data from a handheld is received at server 24 it is processed, as necessary, and placed in a database</p>

	where it can be accessed via the internet 26. A client can then use a computer 22 with internet access to review or use the data from virtually anywhere in the world. (Provisional p. 18) <i>See also Claim 1 on p. 27</i>
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147. Since there is ample support in the provisional patent application dated Aug. 19, 2002 for the elements of claim 7, claim 7 is entitled to this priority date.

148. I should also note that the Gray report has made no assertion that the ‘748 patent lacks written description or enablement. The statements made in the ‘748 patent specification concerning GPS (*e.g.*) are identical to the statements made in the provisional patent application. The written description and enablement of an integral GPS capability in the patent specification, which is not in dispute, matches the written description and enablement of an integral GPS capability in the provisional application. That is, the Gray report effectively does not dispute that the provisional patent application lacks support for any element for which the disclosure in the actual patent specification matches *verbatim*.

B. The Claim is eligible for the date of conception and/or reduction to practice

149. As part of the prosecution of the ‘748 patent, the patent applicant submitted materials, including a declaration from David Payne (FALL_0002388 to 2399). I have also examined a “Bama Secret Shopper” document that includes minutes from Board meetings and a presentation on the “anyware” system (FALL_0002683 to

2738), and a description of the Bama Secret Shopper application (FALL_0002668 to 2682).

150. The Payne declaration asserts that “Prior to January 1, 2002, I [David Payne] conceived the idea of a system and method for the management of data collected from a remote computing device wherein a questionnaire which may be represented by a plurality of tokens is transmitted to the remote computing device; the questionnaire is then executed by the remote computing device and at least a portion of the response(s) to the questionnaire are transmitted to a network which may be a loosely networked computer.” (FALL_0002388) It goes on to assert that “subsequent to January 1, 2002, I and others under my direction worked diligently to further reduce to practice and improve various embodiments of this invention until the filing of my provisional patent application on August 19, 2002.” (*Ibid*) It further presents spreadsheets documenting time spent by engineers developing the invention.

151. The materials also include a slide depicting an SD expansion card with GPS capability. (FALL_0002719)

152. Taken collectively, these show that the claimed invention (including designing questionnaires, transmitting them over “loose” networks, executing them, and collecting the results) were conceived as of January 1, 2002 and that the inventor worked diligently after that time to reduce it to practice.

153. The Gray report attempts to argue that the combination of elements, including an integrated GPS, were not conceived as of this date. (Gray report, pp. 16ff.) Ironically, the report then undermines itself. The Gray report contends that integral GPS receivers were routine and conventional as of early 2002. If that is so, then the paperwork submitted by Mr. Payne does not need to reference integrated GPS – it is clear that it could be added to the other elements of the invention. In other words, under the logic of the Gray report, the lack of integral GPS in the Payne declaration is immaterial. (To be clear, I do not agree with the Gray report’s opinion about integral GPS; see above.)

154. The fact of the matter is that the inventors did understand GPS technology, citing an example of an add-in GPS card (which, to be clear, was not “integral thereto”). Thus there is clear evidence that the inventors had the entirety of the claimed invention in mind and had conceived it as of January 1, 2002. This is the “later-proposed” date of conception that I reference above.

155. I understand that Fall Line has asserted a conception date of August 1, 2001. I present no evidence of this earlier date in this report and reserve the right to modify my opinion about the date of conception if or when more evidence comes to light. This is the “earlier-proposed” date of conception that I reference above.